

CLAIMS

1. A method for correcting a voltage of a secondary battery, the method
correcting battery voltages measured in a battery system having plural
5 voltage measurement systems and having plural secondary batteries in each
of the voltage measurement systems, and the method comprises steps of:
calculating representative voltages from battery voltages measured in
the respective voltage measurement systems;
calculating voltage correction values on the basis of the calculated
10 representative voltages; and
correcting the measured voltages of the secondary batteries in the
voltage measurement systems, on the basis of the voltage correction values.
2. The method for correcting a voltage of a secondary battery according to
15 claim 1, wherein the representative voltages are calculated as average
voltages of the battery voltages measured in the respective voltage
measurement systems, the method for correcting the voltages of the
secondary batteries comprises a step of calculating a difference between
average voltages of different voltage measurement systems, and the voltage
20 correction values are calculated on the basis of the average voltage
differences so that the average voltages in the voltage measurement systems
are equalized.
3. The method for correcting a voltage of a secondary battery according to
25 claim 1, wherein the representative voltages are calculated without measured
voltages of batteries that have been determined to be abnormal in the
respective voltage measurement systems.
4. The method for correcting a voltage of a secondary battery according to
30 claim 1, wherein the representative voltages are calculated without measured

voltages whose deviations from the representative voltages in the respective voltage measurement systems exceed a predetermined range.

- 5 5. The method for correcting a voltage of a secondary battery according to claim 1, wherein the representative voltages are calculated without measured voltages of batteries whose temperatures are different from the temperatures of the remaining batteries in the respective voltage measurement systems and the differences are greater than a predetermined value.
- 10 6. The method for correcting a voltage of a secondary battery according to claim 1, wherein the representative voltages are calculated without measured voltages from a voltage detection circuit system that has been determined to be abnormal.
- 15 7. The method for correcting a voltage of a secondary battery according to claim 1, comprising a step of calculating an average value of the voltage correction values in a predetermined period of time.
- 20 8. The method for correcting a voltage of a secondary battery according to claim 1, wherein the secondary battery comprises a battery block composed of plural cells or unit cells connected in series.
- 25 9. A method for estimating a state of charge of a secondary battery, the method comprising steps of:
 - calculating representative voltages from battery voltages measured by respective voltage measurement systems in a battery system having plural voltage measurement systems and having plural secondary batteries in each of the voltage measurement systems;
 - calculating voltage correction values on the basis of calculated
- 30 representative voltages;

correcting the measured voltages of the secondary batteries in each of the voltage measurement systems, on the basis of the voltage correction values; and

calculating state of charge of the secondary batteries on the basis of the battery voltages obtained through a step of correcting the measured voltages.

10. An apparatus for correcting a voltage of a secondary battery, the apparatus correcting battery voltages measured in a battery system having plural voltage measurement systems and having plural secondary batteries in each of the voltage measurement systems, wherein the apparatus comprises:

voltage measuring part provided in the respective voltage measurement systems so as to measure voltages of the secondary batteries;

15 a representative voltage calculating part for calculating representative voltages from battery voltages measured by the voltage measuring part;

a voltage correction value calculating part for calculating voltage correction values on the basis of the respective representative voltages; and

20 a correction value reflecting part for correcting the measured voltages of the secondary batteries in each of the voltage measurement systems, on the basis of the voltage correction values.

11. The apparatus for correcting a voltage of a secondary battery according to claim 10, wherein the representative voltage calculating part calculates the representative voltages as average voltages of battery voltages measured in the respective voltage measurement systems, the voltage correction apparatus for a secondary battery comprises an average voltage difference calculating part for calculating differences with respect to average voltages of different voltage measurement systems, and the voltage correction value

calculating part calculates the voltage correction values on the basis of the average voltage differences so that average voltages in the respective voltage measurement systems are equalized.

5 12. The apparatus for correcting a voltage of a secondary battery according to claim 10, wherein the representative voltage calculating part calculates the representative voltages without measured voltages of batteries that have been determined to be abnormal in the respective voltage measurement systems.

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13. The apparatus for correcting a voltage of a secondary battery according to claim 10, wherein the representative voltage calculating part calculates the representative voltages without measured voltages whose deviations from the representative voltages in the respective voltage measurement systems
15 exceed a predetermined range.

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14. The apparatus for correcting a voltage of a secondary battery according to claim 10, wherein the representative voltage calculating part calculates the representative voltages without measured voltages of batteries whose
temperatures are different from the temperatures of the remaining batteries in the respective voltage measurement systems and the differences are greater than a predetermined value.

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15. The apparatus for correcting a voltage of a secondary battery according to claim 10, wherein the representative voltage calculating part calculates the representative voltages without measured voltages from a voltage detection circuit system that has been determined to be abnormal.

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16. The apparatus for correcting a voltage of a secondary battery according to claim 10, wherein the apparatus comprises a voltage correction value

averaging part for calculating an average value of the voltage correction values in a predetermined period of time.

17. The apparatus for correcting a voltage of a secondary battery according to claim 10, wherein the secondary batteries comprise a battery block composed of plural cells or unit cells connected in series.
18. A method for estimating a state of charge of a secondary battery, comprising:
- 10 voltage measuring part for measuring voltages of secondary batteries in a battery system having plural voltage measurement systems and plural secondary batteries in each of the voltage measurement systems, and the voltage measuring part being provided in the respective voltage measurement systems ;
- 15 a representative voltage calculating part for calculating representative voltages from battery voltages measured by the voltage measuring part;
- a voltage correction value calculating part for calculating voltage correction values on the basis of the respective representative voltages;
- 20 a correction value reflecting part for correcting the measured voltages of the secondary batteries in each of the voltage measurement systems on the basis of the voltage correction values; and
- a state of charge calculating part for calculating state of charge of the secondary batteries on the basis of battery voltages obtained by the correction value reflecting part.
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